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THE MEDIEVAL CASTLE REVIVAL: NEW YORK ARMORIES

ROBERT KOCH

THE ARMORY with its castle façade and large drill-shed is still a familiar sight in almost every large city in America, although most of these edifices were constructed in the last decade of the nineteenth century or the first decade of the twentieth. Many are still fulfilling their original function, the training of an armed militia, and are also frequently rented for exhibition and other purposes. They are of a type of building which reveals something of the attitude toward revival architecture at the turn of the century in this country.

The term "armory" which had originally referred only to the place of manufacture of arms, came to be used in connection with militia headquarters. An early use of the term in this sense can be found in 1835 when "the Newport Artillery, now the oldest active military organization in America, voted to build a new 'armoury'."¹ As early as 1843, the New York Seventh Regiment started its "first movement for a regimental armory and drill rooms."² The practice expanded the meaning of the word so that, in 1901, it is defined as:

A building for the use of a body of militia, with storage for their arms and equipment. In modern American practice, the newer armouries are strongly built structures of considerable size, containing a large and well-lighted drill hall, in some cases large enough for battalion exercises and practice with light artillery; a shooting gallery, a gymnasium, special rooms for the higher officers, and in many cases separate rooms for each of the companies of a regiment. Libraries, messrooms, kitchens and storerooms, workshops, locker rooms, and other accessories are features of many of these buildings in large cities, where they serve the purposes of a military club as well as of a military storehouse and drill shed.³

This type of armory was evolved by and for the élite New York Seventh so it is necessary to examine the process in some detail.

The Seventh Regiment

In New York City several buildings were erected for use by the National Guard. An arsenal at 64th Street and Central Park was begun in 1847 and completed in 1851.

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It was used only until 1857 when the State Arsenal on Seventh Avenue and 35th Street took its place. It has since been used as a museum of natural history and now provides offices for the Department of Parks. The Seventh Regiment used this building from 1853 until 1857. The building stands today facing Central Park Zoo as a fine example of a castle style military building from the middle of the nineteenth century.

In 1852 a new City Armory was built on the corner of Elm and White Streets and another at Second Avenue and 21st Street was burned by the draft rioters in 1863.

In 1855 the Seventh Regiment began to solve its needs for a building of its own. An agreement was signed with the butchers using Tompkins Market to rebuild and share that building. Tompkins Market on Third Avenue between 6th and 7th Streets had originally been erected in wood in 1830. It was rebuilt in iron beginning in the summer of 1857 in a style resembling other commercial cast iron fronts like that for the Harper & Bros. building by James Bogardus in 1854, and was completed in September, 1860.

The Tompkins Market Armory satisfied the needs of the Seventh Regiment through the Civil War years until 1868. In fact, the Seventh Regiment was the only National Guard unit in New York that owned even part of a building. Most of the other units rented space in lofts or office buildings.

After the Civil War a combination of pressures led to a demand for larger quarters for the Seventh Regiment: the northward migration of population on Manhattan Island, the development in the war of new and heavier equipment, and the upsurge in patriotism which increased the numbers and wealth of the unit.

In September, 1874, a 21-year lease was signed for a plot owned by the city between 66th and 67th Streets, Fourth and Lexington Avenues. Charles W. Clinton was engaged to draw preliminary plans and the total cost was estimated at about \$400,000. The ceremonies of laying the cornerstone took place October 13, 1877. The roof of the administration building, facing on Park Avenue, was completed before the end of 1878 (Fig. 1).

The construction of the drill-room took longer. The trusses were not set in place until December of 1878, and the walls and roof were not completed until 1879 (Fig. 2).

The New Armory was formally opened to the public on September 30, 1880, was visited by 38,000 people and on December 15, 1880, the New Armory Inauguration Ball was held.

Colonel Emmons Clark who conceived the idea of the New Armory wrote of its construction:

The designs adopted by the Building Committee were the work of Charles W. Clinton, architect, and to his genius and admirable artistic taste the Regiment is mainly indebted for the architectural beauty of the building, exterior and interior, and for the complete construction and finish of every part of the immense structure. The designs and plans for the large iron trusses and other iron-work of the drill-room building were made by Charles Macdonald, President of the Delaware Bridge Company. The services of R. F. Hatfield, consulting architect, were mainly devoted to the study of the working plans.⁴

The trusses were supplied and erected by The Danforth Locomotive and Machine Company, of Paterson, New Jersey. The total cost of the Armory came to over \$605,000.

The measurements of the drill-room are as follows: width—187 feet, 4 inches, over all, 183 feet, 4 inches, clear; height—90 feet, 10 inches, over all, 70 feet to the underside of the arch. The trusses are 24 feet apart and the length is 290 feet, 8 inches, in the clear. Under the drill-room there is a rifle-range three hundred feet long, roofed with arched masonry and containing six targets.⁵ The obvious basis for comparison of these figures is with the train shed of the old Grand Central Station built between 1869 and 1871. A contemporary wrote that the same type of truss is used but it had been strengthened so as to have been able to bear more weight.⁶

Writing in 1923, A. D. F. Hamlin states that

the old type of terminal railway-station with its headhouse and vast train-shed dates from the sixties and was typical for thirty years. It embodies many of the elements of the Armory problem and furnished obvious precedents for drill-shed design. The train shed of the old Grand Central Depot at New York with its length of over 600 feet and its span of 200 will be remembered by our older architects as an unusually elegant sample of its type.⁷

He is aware that “the earliest of our armories to be roofed with iron and glass” was that of the Seventh Regiment which he erroneously attributes to Mr. Hunt. He continues that “for its time it was a striking and original work, a straightforward and practical design with an exterior free from the more or less affected mediaevalism that marked not a few armories of slightly later date.”

The interior decoration of the regimental rooms was planned and supervised by Charles Clinton according to a plan submitted in September, 1879, while one wing, including the Veterans Room and Library, was decorated in 1880 for the Veterans Association by a group of artists under the direction of Louis C. Tiffany.⁸ This Veterans Room immediately became the main attraction of the

armory building since it represented a major effort of some of the best known painter-decorators at a time when the public interest in decorative art was reaching a high point. Working with Tiffany on this project was Stanford White, the architect, Samuel Colman, George Yewell and Frank D. Millet, painters who, like Tiffany, had exhibited in Paris in 1878, and Mrs. Candace Wheeler who had previously done some embroideries from Tiffany designs. The whole was described as “distinctly out of the common” and remains today as one of the finest examples of late Victorian “artistic” interiors.⁹

As it stood in 1880 the Seventh Regiment Armory was the finest and best equipped armory building in the country. To keep up with the progress in military affairs, the building has undergone two major alterations. In 1910-11, the central tower was removed, another floor was added to the administration building and a balcony was added to the drill room. Then, in 1931, a fifth floor was added and the 3rd and 4th floors were completely redone.

Other Armories, 1880-1900

The success of the Seventh Regiment Armory stimulated every other unit of the National Guard, not only in New York but in neighboring cities as well, to desire a similar type of building for itself. In 1882 the First Regiment of the Philadelphia National Guard erected a new armory from plans by J. H. Windrim. In 1884 a New York State Armory was built at Troy, New York, designed by Brown-Dawson. In 1886, Norwalk, Connecticut, in 1887, Boston, in 1890, Chicago, and in 1895, Cleveland, joined the growing list of cities with large armory buildings.¹⁰ Of these armories built outside of New York, the most interesting to use for comparison is the one in Chicago (Fig. 3) because of the very progressive character of the Chicago School of Architecture at this time.

The First Regiment of the Illinois National Guard had been organized in 1874 and by 1890, when the new armory was built, consisted of 530 men, Col. Charles R. E. Koch commanding. This new armory was “located at the north-east corner of Sixteenth Street and Michigan Avenue. It is perhaps the most massive structure in Chicago. . . . The architects, Burnham & Root, have also achieved a notable success in the interior arrangements. The space covered by the building, 164 by 174 feet, gave room for a very large drill-hall on the first floor. . . . The armory, which is the best building of the kind in the United States, was built largely by subscription.” Marshall Field gave the regiment a 99-year lease of the site at a nominal rental.¹¹ Burnham and Root show that they have well learned the lessons of Richardson and Sullivan, particularly as expressed in the former’s warehouse for Marshall Field. The mass of the building is simplified into a solid block and only a token of the medieval fortress character remains. As a plan it has simplicity and strength that is totally



FIG. 1. New York. Seventh Regiment Armory, 1878. Charles W. Clinton, architect. (The New-York Historical Society)

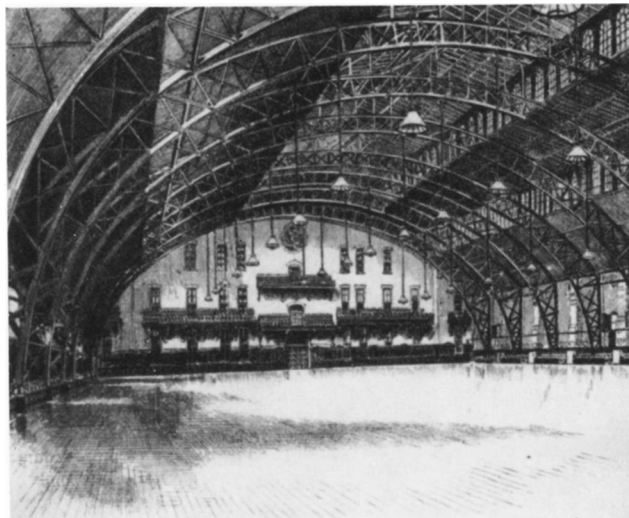


FIG. 2. New York. Seventh Regiment Armory drill-room. Completed 1879. (Emmons Clark, *History . . .*, 1890)

FIG. 3. Chicago. First Regiment Armory, 1890. Burnham & Root, architects. (Author Coll.)



FIG. 4. New York. Eighth Regiment Armory, 1890. John R. Thomas, architect. (The New-York Historical Society)



lacking in the much more picturesque designs that were then springing up all over the City of New York. Until 1920, this was Chicago's only armory. By 1900 New York had a total of nine new armories including the Seventh Regiment's.

In 1884 the Armory Board of the City of New York was created to solve the housing problems of National Guard units that did not have the resources of the Seventh Regiment. At that time there was a total of eight regiments in New York. During its first year the armory board received requests for quarters from six of these regiments. Besides the Seventh, only the Sixty-Ninth Regiment, the "Fighting Irish," refrained from making a request (until 1886). This is explained by the fact that it had moved into Tompkins Market when the Seventh moved out. All of these requests included, as part of their requirements, a drill room 200 feet square, which, according to the armory board, was needed by "the Battery of Gatling Guns."¹²

As one of its first acts the Armory Board "made an inspection of such armories as there were, and gave as much time to the Seventh Regiment's armory as to all others combined. The Seventh's was the last word in armories in those days."¹³ By the end of 1884 three sites had been purchased and plans for two armories had been accepted. A two million dollar bond issue was floated to raise the funds.¹⁴

These armories were completed as follows:

1. *Twelfth Regiment Armory*. The site was purchased in 1884 for \$208,000 between 61st and 62nd Streets on Ninth Avenue. A competition was held and the plans of James E. Ware were accepted. The building was completed in 1886. This is the only case before 1900 where the Board selected

its architect on the basis of a competition. Ware had been a member of the Seventh Regiment while that armory was being built. He later became interested in fireproof warehouse construction and in 1891 designed the Manhattan Warehouse building.

2. *Eighth Regiment Armory* (Fig. 4). A site was purchased in 1884 at Fourth and Madison Avenues between 94th and 95th Streets. The building was built in 1889 and a grand opening was held on January 30, 1890. The architect, John R. Thomas, placed the armory facing Fourth Avenue on the easterly three-quarters of the plot. Another armory for cavalry Squadron "A" was added to the site by architect Thomas in 1894–95 making this an armory which served two units. The drill-hall with its clear space of 180 feet by 300 feet which served both units had to be altered to provide stables and a dirt floor. After this John R. Thomas' most important building was the Hall of Records completed in 1901.

3. *Twenty-Second Regiment Armory*. The site on Ninth Avenue and the Boulevard (now Broadway) between 67th and 68th Streets was also purchased in 1884. The building was erected 1890–92 from plans by George B. Post, one of New York's leading architects, who in 1880 had designed the Cornelius Vanderbuilt mansion and in 1881–84 was architect of the Produce Exchange building on Bowling Green, one of the more important buildings of the period. Post was a veteran of the 22nd Regiment; he had served with that outfit during the Civil War. The regiment was stationed in this armory only until 1911 when it moved into still larger quarters farther uptown.

4. *Seventy-First Regiment Armory*. The site on Fourth Avenue between 33rd and 34th Streets was acquired in 1891. John R. Thomas also designed this building which was erected in 1892. It had a drill area on two levels, the lower for the battery and the upper for the infantry. A fire completely destroyed this armory in 1902.

5. *Ninth Regiment Armory*. The site on 14th Street between Sixth and Seventh Avenues was acquired in 1891. The building was erected in 1894–96 from plans by Cable and Sergeant. The drill floor of 188 feet by 210 feet is still being used for exhibitions.

Before 1900 there were also two armories built in Brooklyn, one for the Thirteenth Regiment on Sumner and Jefferson Avenues and one for the Twenty-Third Regiment at Bedford and Atlantic Avenues. But there is nothing distinctive or architecturally important about any of these seven buildings.¹⁵ They follow the formula set by the Seventh, each with an administration building and a drill-shed, the only tendency being an increased picturesqueness and an increase in the use of medievalisms. Not one is as tailored as the Seventh Regiment's; not one is as simple and massive as the Chicago armory, and yet, none of these is as fully picturesque as the one completed in 1905 on the site of the burned-out Seventy-First.

Turning Point, 1900–1910

Shortly after 1900 the Armory Board of New York instituted the policy of using competitions for plans for armories and awarding \$500 to each of the losing competitors. This seems to have stimulated a general interest in the character of these buildings. Writing in 1905, Montgomery Schuyler states that

we have by no means, even in the State of New York, and after so many expensive experiments, arrived at anything that may fairly be called a type . . . which makes it an extremely attractive architectural problem. It shares with the storage warehouse the relaxation of the commercial requisition that a building shall be composed of a minimum of wall and a maximum of window.¹⁶

At a meeting of the Armory Board on March 16, 1903, plans were finally accepted for building four more new armories, two in Manhattan and two in Brooklyn. These four buildings mark both the climax and the turning point of the armory building program.

In Manhattan one was for the rebuilding of the Seventy-First Regiment Armory at 34th Street and Park Avenue which had burned down in 1902; the other was for a new armory for the Sixty-Ninth Regiment, on Lexington Avenue between 25th and 26th Streets, a site acquired in 1896 when it was decided that Tompkins Market was no longer serviceable.

The competition for the Seventy-First was won by Clinton and Russell and the new building was finished by 1905 (Fig. 5). By this time Charles Clinton had become one of New York's leading commercial architects. He was the builder of the Hotel Astor, New York Athletic Club, the Bank of America and many other bank and insurance company buildings. His second armory, which houses a drill-hall 190 feet by 208 feet,¹⁷ is completely picturesque.

The traditions one finds in full force, all the conventions of the medieval warfare to which distance lends enchantment. . . . The parapets are crenellated, though nobody is expected to shoot between the crenelles. The cornices are machicolated, though nobody expects to pour hot lead from the machicoulis. But the composition, with its flanking round towers on each side of the entrance . . . the thickness of wall . . . the effective bonding of the rough brick walls with rough light stone—all these things are of an undeniable attractiveness.¹⁸

Also, the very tall tower, derived from Siena and asymmetrically placed, helps to make this an excellent example of picturesque eclecticism which effectively conceals the engineering of the drill-hall structure.

The other armory, begun in April, 1904, and also completed in 1905, less than a half-mile away, represents a completely new and different tendency. As the Seventy-First is completely within the nineteenth-century concept of the picturesque, so the Sixty-Ninth Regiment Armory represents the first step toward a modern or twentieth-century

concept. The design submitted by Joseph H. Hunt, of Hunt and Hunt, which won the competition rejects the use of medievalisms.

It seems even to be a protest and token of revolt against them. It is noteworthy by the absence of the conventions of military architecture . . . for, one sees, this practical conception of an armory is with difficulty distinguishable from that of a railroad station, with its 'head house,' answering to the administration, and its 'train shed' answering to the drill-room. Which conception, one has to own, is very thoroughly carried through.¹⁹

This building still has some "picturesque excrescences," but it is far more simple, restrained and honest in its exterior reflection of interior organization than any earlier example. It clearly points to the newer, more rational trends which at that time were beginning to develop in all phases of art. The drill-hall roof is carried by six pairs of three-hinge riveted steel trusses. Each truss has a span of 189 feet 8 inches and a rise of 103 feet 4½ inches center to center of pins. The drill-hall measures 201 feet 11½ inches by 168 feet 10 inches and all floor and roof slabs are of reinforced concrete construction. The brick arch at the east end of the drill-hall has a span of 90 feet 2 inches. This was the hall selected for the famous Armory Show of Modern Art, in 1913, and it is still available for exposition purposes.²⁰

The Sixty-Ninth's was the last of the armories to be built in the downtown business district of Manhattan. Of the two Brooklyn armories, both of which were completed in 1907, the one for the Second Battalion Naval Militia by Horgan and Slattery is not included in this paper because of the special problems of the Naval Militia. The other for Squadron "C," on Bedford Avenue between Union and President Streets (Fig. 6), represents a new direction in armories since here, for the first time, the administration building is made to play a role subservient to that of the drill-hall.

This building marks the appearance of an architect whose name has become identified with the armories of New York in the twentieth century. Lewis F. Pilcher graduated from the School of Architecture at Columbia in 1895. He acquired his first practical experience in the office of Mercein Thomas in Brooklyn and, in 1901, set up an independent practice with his classmate, W. G. Tachau, which he maintained until 1921. At the meeting in 1903, the Armory Board awarded the firm of Pilcher and Tachau the job of building an armory for Troop "C," in Brooklyn. This was their first success. Professor A. D. F. Hamlin of Columbia University was one of the professional advisors of the Armory Board at the time of this competition.

Troop "C" had made its application for an armory in 1901, the site was purchased in 1902, ground was broken in 1903 and, by 1907 the Troop, which had by then become a Squadron, moved in. Hamlin later characterized the design of the building as simple, direct and convenient.

The arrangement of the stables in pavilions, each open to the light and air on three sides and on the fourth communicating directly with the drill-hall, was a wholly novel conception which won instant approval.²¹

The riding-hall has an area 180 feet by 311 feet clear. The 17 steel crescent trusses that support the concrete slab roof are 80 feet high. A contemporary critic, writing in the *American Architect and Building News*,²² states that "the style of the armory structure is that known as 'L'Art Nouveau'." Actually, in the interior, there are some typically Art Nouveau details. The glass transom lights in the dining room and squad room are leaded in patterns of swirls that derive from designs by Van de Velde. Stained glass panels in the roof and a frieze in the upper hall are also fully Art Nouveau as is a portion of the iron grill railing of the balcony. But this is only a fraction of the work. The greater part, even of the detail, is a simplified stiff classical which belongs more to the machine than to the organic swirl.

Pilcher's successes were based on a careful and rational approach to the problems of function. He was the first architect who made a careful study of armory requirements and solved them on an engineering basis. However, it might seem to us today that there is still an element of romanticism in the erection of a look-out tower on Bedford Avenue, no matter how rational the form. Nevertheless, he designed a total of at least eight armories in the State of New York and was appointed by Governor Sulzer as State Architect in 1913 under the Public Buildings Act of 1909.

Between 1905 and 1911 the Armory Board supervised the building of four new armories at the expense of the city. In 1906-07 a new building was added to the Thirteenth Regiment Armory at Jefferson and Sumner Avenues; the Second Battery Armory at Franklin Avenue between 166th and 167th Streets in the Bronx was built in 1908-09; a new armory for the Twenty-Second Regiment at Fort Washington Avenue between 168th and 169th Streets in Manhattan was built in 1909-11 by Walker and Morris with a drill-hall 176 feet by 401 feet; and in 1911 an armory for the Third Battery was erected at 171 Claremont Avenue.

Six more armories were built at the same time by other agencies, three of them in Brooklyn financed by Kings County and three others by New York State of which two were in Brooklyn and one in Queens. None of these is as large as the one for Squadron "C" and none as architecturally important. By 1911, there were more than twenty armories actively functioning within the limits of New York City.

The Kingsbridge Armory and After

The Kingsbridge, or Eighth Coast Artillery District Armory (Fig. 7), is the largest armory building ever built in the United States. The process which produced this

huge structure was initiated in December, 1909, when the Armory Board approved a request of Colonel Austin for a new armory for the Eighth Coast Artillery District. On May 23, 1910, the Board recommended as a site for this armory "the lower unused portion of Jerome Park Reservoir situated at the north side of Kingsbridge Road between Jerome and Grand Avenues." The negotiations that followed were handled by Col. Austin with great speed and efficiency so that by March 16, 1911, the land had been surrendered by the Department of Water Supply, Gas and Electricity and the plans made by Pilcher and Tachau were accepted. Before the end of 1911 a necessary retaining wall was being built and bids were out for the construction of the building.²³ The building was begun in 1912, was interrupted by World War I and was not occupied until 1917, but the finished building does not differ in any major respect from the original plans.

In spite of the huge size of the drill-shed which dominates the whole, there is here a marked return to medievalism in the detail of the administration section. The result is therefore somewhat contradictory as these forms are dwarfed by the size of the drill-hall. The contour of the land and the size of the structure resulted in this arrangement with the administration building alongside instead of at one end of the hall.

FIG. 5. New York. Seventy-First Regiment Armory, 1905. Clinton & Russell, architects. (New York Convention and Visitors Bureau)



The drill-floor (Fig. 8) measures 328 feet by 600 feet over all, and the roof is supported by double trusses spaced over 30 feet on centers of the four-centered Tudor or Persian arch-form, which have a clear span of 308 feet and are about 140 feet high. Under the drill-floor there is today a garage which can house 800 trucks. This space originally was occupied by a rifle range 400 feet long, a bowling alley, a gymnasium, a lecture room, etc.

Hamlin notes that the length of this armory of 600 feet is identical to that of the old New York Grand Central Station already mentioned. The span he compares with the Paris Machinery Hall of 1889, which measured 1200 by 367 feet, and the central area of the Liberal Arts Building at the Chicago World's Fair in 1893 which measured 1300 by 384 feet, at that time (1923) the largest unencumbered space ever put under one roof.²⁴ The railway station which most closely approximates the Kingsbridge Armory is Broad Street Station in Philadelphia of 1892-93 with its three-hinge five-centered arches having a total span of 300 feet and a height of 108 feet. The length of this station, which Pilcher also must have known, is 595 feet. The armory roof, however, is much simpler and contains much less glass than was normal for a train-shed. No armory as large as this has since been built in this country, but from the lessons of this accomplishment a pattern was fixed that served as a model, not only for more recent armories, but also for other military-engineering problems, including aircraft hangars.

After the Kingsbridge there is no record of any extensive program of armory building in the City of New York. Between the two world wars the main problems were those of maintaining those buildings which were still in use. Outside of New York an active building program was carried on by the Public Works Administration between 1933 and 1939, which built armories from coast to coast. The decorative exteriors of these armories vary from

FIG. 6. Brooklyn. Squadron "C" Armory, 1903-07. Pilcher & Tachau, architects. (Squadron "C" Armory)



colonial revival to simple modern. However, for the most part their plans follow the type set in New York before 1917. The armory built in Jersey City, New Jersey, completed in 1936, has a drill-floor at street level, 248 by 321 feet.²⁵

The spirit is dead which saw the medieval fortress as a fit symbol for the militia. The old armory buildings are

tolerated only because no satisfactory substitute has yet been found. The Seventh Regiment Armory stands at the beginning of the development as a highly original work of architecture, while the Kingsbridge Armory is a gigantic machine not yet divested of medieval trim yet pointing to the naked steel and poured concrete of the airport hangars of today.

YALE UNIVERSITY

The writer wishes to express his appreciation for the assistance and encouragement of Carroll L. V. Meeks.

1. Vincent J. Scully, Jr., and Antoinette F. Downing, *The Architectural Heritage of Newport, Rhode Island* (Cambridge, Mass., 1952), p. 195.

2. Colonel Emmons Clark, *History of the Seventh Regiment of New York, 1806-1889*, (2 Vols.; New York, 1890), I, 296.

3. A. D. F. Hamlin, "Armoury," Russell Sturgis (ed.), *A Dictionary of Architecture and Building* (New York, 1901), I, 150-151.

4. Clark, *op. cit.*, II, 299.

5. These measurements appear under a printed photograph of the trusses being installed which was circulated by the Danforth Locomotive and Machine Co. The Seventh Regiment has a copy.

6. Clarence C. Buel, "The New York Seventh," *Scribner's Monthly*, Vol. 20 (May 1880), p. 79.

7. A. D. F. Hamlin, "The State Architect and His Works," *The Architectural Record*, Vol. 53 (January 1923), p. 42. His statement is confirmed by a comparison of dimensions as listed by C. L. V. Meeks in his forthcoming book on railway stations.

8. A detailed chronology of the decoration is being prepared by the author from the archives of the Regiment and the records of the Veterans group in connection with a dissertation on Louis C. Tiffany.

9. A bibliography of contemporary comments and an analysis of this decoration will also be included in this forthcoming dissertation.

10. *American Architect and Building News*, Vol. 12, p. 305; Vol. 15, p. 294; Vol. 21, p. 271; Vol. 47, p. 21; *American Architect*, Vol. 99², pp. 196-197; Vol. 110, pp. 77-82; Vol. 118², No. 2339.

11. "First Regiment Armory, Chicago," *Inland Architect and News Record*, Vol. 18, No. 6, and John J. Flinn, *The Standard Guide*

to Chicago (Chicago, 1891), pp. 336-338.

12. *The Armory Board, 1884-1911* (New York, 1912), pp. 5-7.

13. *Ibid.*

14. *Ibid.*

15. Reproduction of photos of seven of the eight armories then in use in New York can be seen in E. Idell Zeisloft (ed.), *The New Metropolis* (New York, 1899), pp. 413-418. The Twelfth Regiment Armory which is omitted by Zeisloft can be found together with other photos in Moses King, *King's Handbook of New York City* (2nd ed.; Boston, 1893), pp. 531-536.

16. Montgomery Schuyler, "Two New Armories," *The Architectural Record*, Vol. 19 (April 1906), p. 259.

17. *American Architect and Building News*, Vol. 89, p. 92 and *Engineering Record*, Vol. 50 (1904), pp. 4-7.

18. M. Schuyler, *op. cit.*, p. 261.

19. *Ibid.*, pp. 262-264. Included also are two good photos of this armory under construction.

20. William Francis Stanton Root, *The 69th Regiment in Peace and War* (New York, 1905), pp. 35-36 and *Engineering Record*, Vol. 51 (1905), pp. 619-625.

21. Hamlin, *op. cit.*, p. 35.

22. *American Architect and Building News*, Vol. 89 (Jan. 13, 1906), pp. 15-16. This issue also includes 10 pages of drawings and five photographs showing the armory under construction. Today the original structure is preserved intact.

23. The Armory Board, *op. cit.*, p. 35.

24. Hamlin, *op. cit.*, p. 42.

25. C. W. Short and R. Stanley Brown, "Auditoriums and Armories," *Public Buildings Constructed by Federal and Other Governmental Bodies* (Washington, 1939), pp. 87-107. Also for other recent examples cf. *Architectural Concrete*, Vol. 8, No. 2 (May 1942), pp. 26-31.

FIG. 7. The Bronx, New York. Kingsbridge Armory, 1911-17. Pilcher & Tachau, architects. (New York Convention and Visitors Bureau)

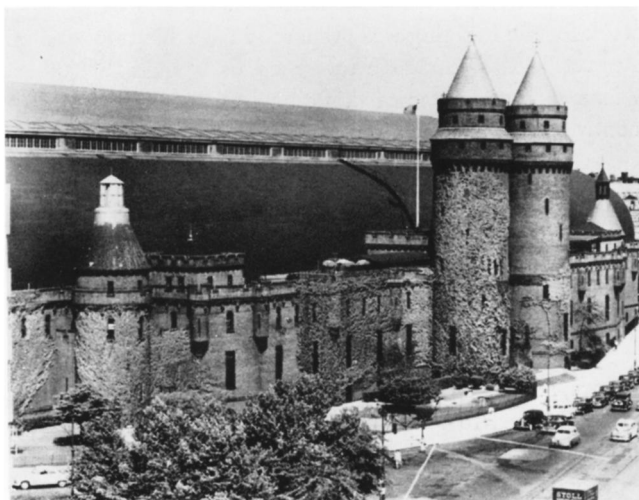


FIG. 8. The Bronx, New York. Kingsbridge Armory drill-hall. (New York Convention and Visitors Bureau)

